Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An apparatus comprising:

a timing error detector to detect a timing error for symbol sampling, the timing error detector to detect an amount of timing error based upon a value of an intersymbol sample as compared to an average value of a plurality of symbol samples, wherein the apparatus is adapted to apply a correction to the timing of symbol sampling if the amount of timing error exceeds a threshold;

wherein the timing error detector is adapted to detect an amount of timing error based upon an average of the values for first and second symbol samples minus a value of an intersymbol sample between the first and second symbol samples.

2. (Original) The apparatus of claim 1 wherein the timing error detector is adapted to detect an amount of timing error based upon a value of an intersymbol sample minus an average value of a plurality of symbol samples, the intersymbol sample located between at least two of the plurality of symbol samples.

3. (Canceled).

4. (Currently Amended) The apparatus of claim ~~3~~ 1 wherein the first sample is a sample of a first symbol, and the second sample is of a second symbol, the first and second symbols being successive symbols, and the intersymbol sample being a sample taken between the first and second symbol samples.

5. (Original) The apparatus of claim 1 wherein the timing error detector is adapted to interpolate or estimate a value of the intersymbol sample based on one or more other sample values.

6. (Currently Amended) The apparatus of claim ~~3~~ 1 wherein the timing error detector is adapted to measure the value of the intersymbol sample at a sampling point that is approximately mid-way between the first and second symbol samples.

7. (Original) The apparatus of claim 1 wherein the timing error detector is adapted to sign normalize the amount of timing error based on one or more of the signs of the first and second symbol samples.

8. (Original) The apparatus of claim 1 wherein the timing error detector is adapted to sign normalize the amount of timing error by multiplying the amount of timing error by the sign of the value of one of the symbol samples.

9. (Original) The apparatus of claim 1, wherein the apparatus further comprises a demodulator.

10. (Original) The apparatus of claim 1 wherein the apparatus further comprises a transceiver.

11. (Currently Amended) The apparatus of claim ~~3~~ 1 wherein the timing detector is adapted to first determine whether there has been a sign change, either positive to negative or negative to positive from the values of the first and second symbol samples before detecting the amount of timing error.

12. (Original) The apparatus of claim 1 wherein the timing error detector is adapted to detect an amount of timing error for both in-phase (I) and quadrature (Q) signals.

13. (Currently Amended) An apparatus comprising:

a timing error detector to detect a timing error for symbol sampling, the timing error detector adapted to detect an amount of timing error based upon ~~at least a portion of a sum~~ an average of the values for first and second symbol samples~~, as compared to~~ minus a value of an intersymbol sample taken between the first and second symbol samples, wherein the apparatus is adapted to apply a correction to the timing of symbol sampling if the amount of timing error exceeds a threshold.

14. (Original) The apparatus of claim 13 wherein the timing error detector is adapted to detect an amount of timing error based upon one half of the sum of the values for first and second symbol samples, as compared to a value of the intersymbol sample between the first and second symbol samples.

15. (Original) The apparatus of claim 13 wherein the timing error detector is adapted to detect an amount of timing error for both in-phase (I) and quadrature (Q) signals.

16. (Previously Presented) An apparatus comprising:

a timing error detector to detect an amount of timing error for symbol sampling, the timing error detector adapted to determine whether there has been a sign change, either positive to negative or negative to positive, from the values of first and second symbol samples, and if so, then to detect an amount of timing error based upon the difference between:

an average of the values for first and second symbol samples; and

the value of an intersymbol sample between the first and second symbol samples;

wherein the apparatus is adapted to apply a correction to the timing of symbol sampling if the amount of timing error exceeds a threshold.

17. (Original) An apparatus of claim 16 wherein the apparatus comprises a demodulator.

18. (Original) The apparatus of claim 16 wherein the intersymbol sample is taken at a point that is approximately mid-way between the first and second symbol samples.

19. (Original) The apparatus of claim 16 wherein the timing error detector is adapted to estimate or interpolate the intersymbol sample based upon a plurality of samples.

20. (Currently Amended) An apparatus comprising:

an analog-to-digital (A/D) converter to convert an analog signal to a digital signal;

at least one mixer coupled to the to A/D converter to provide digital data signals; and

a timing error detector to detect an amount of timing error for symbol sampling, the timing error detector adapted to detect an amount of timing error based upon the difference between a value of an intersymbol sample and an average of a plurality of symbol samples;

wherein the apparatus is adapted to apply a correction to the timing of symbol sampling if the amount of timing error exceeds a threshold;

wherein the timing error detector is adapted to detect an amount of timing error based upon the difference between an average of the values for first and second symbol samples and a value of an intersymbol sample taken between the first and second symbol samples.

21. (Canceled).

22. (Original) The apparatus of claim 20 wherein the apparatus comprises a quadrature demodulator, the at least one mixer comprising two mixers to provide in-phase (I) and out-of-phase (Q) signals.

23. (Original) The demodulator of claim 22 wherein the timing error detector is adapted to detect an amount of timing error for both I and Q signals, the total timing error being based on the timing error for both I and Q signals.

24. (Canceled).

25. (Original) The demodulator of claim 23 wherein the demodulator is adapted to apply a correction to the timing of symbol sampling if the sum of the amount of timing errors for I and Q signals exceeds a threshold.

26. (Previously Presented) A demodulator comprising:

an analog-to-digital (A/D) converter to convert an analog signal to a digital signal;

at least one mixer coupled to the to A/D converter provide digital data signals;

an equalizer coupled to an output of the at least one mixer;

a timing error detector to detect an amount of timing error for symbol sampling, the timing error detector adapted to detect an amount of timing error based upon the difference between:

a value of an intersymbol sample; and

an average of first and second symbol samples, the intersymbol sample taken between the first and second symbol samples; and

an averaging circuit coupled to the timing error detector to average a plurality of detected timing errors;

wherein the demodulator is further adapted to apply a correction to the timing of symbol sampling if the amount of timing error exceeds a threshold.

27. (Original) A demodulator of claim 26 wherein at least a portion of the demodulator is operable in two modes:

wherein in a first mode the timing error detector to detect an amount of timing error by using measured values for symbol samples and a measured value for the intersymbol sample; and

wherein in a second mode the timing error detector to detect an amount of timing error by using actual values for symbol samples and a measured value for the intersymbol sample.

28. (Original) The demodulator of claim 27 wherein the first mode comprises an acquisition mode, and the second mode comprises a tracking mode.

29. (Previously Presented) A communication system comprising:

a transceiver, the transceiver including a timing error detector, the timing error detector adapted to detect an amount of timing error based upon the difference between a value of an intersymbol sample and an average of first and second symbol samples;

a processor coupled to the transceiver;

a memory coupled to the processor;

wherein the communication system is adapted to apply a correction to the timing of symbol sampling if the amount of timing error exceeds a threshold.

30. (Original) The system of claim 29 and further comprising an antenna coupled to the transceiver.

31. (Original) The system of claim 29 wherein the memory comprises flash memory.

32. (Currently Amended) A method comprising:

detecting a timing error for symbol sampling based upon a value of an intersymbol sample as compared to an average of a plurality of other samples, determining whether the amount of error exceeds a threshold and adjusting the timing of symbol sampling based on the amount of error, if the amount of error exceeds the threshold;

wherein the detecting comprises detecting an amount of timing error based upon a value of an intersymbol sample minus an average of a plurality of symbol samples, the

intersymbol sample taken between at least two of the plurality of symbol samples.

33. (Canceled).

34. (Original) The method of claim 32 wherein the detecting comprises detecting an amount of timing error based upon a value of an intersymbol sample minus an average of the values for first and second symbol samples, the intersymbol sample taken between the first and second symbol samples.

35. (Original) The method of claim 34 wherein the first symbol sample is a sample of a first symbol, and the second symbol sample is of a second symbol, the first and second symbols being consecutive or successive symbols, and the intersymbol sample being a sample taken between the first and second symbol samples.

36. (Original) The method of claim 32 wherein the value of the intersymbol sample is interpolated or estimated based on one or more other sample values.

37. (Original) The method of claim 32 wherein the value of the intersymbol sample is measured at a sampling point approximately mid-way between the first and second symbol samples.

38. (Original) The method of claim 32 wherein the amount of timing error is to be sign normalized based on the sign of the value of one of the symbol samples.

39. (Canceled).

40. (Canceled).

41. (Currently Amended) A method comprising:

detecting a timing error for symbol sampling based upon a difference between a value of an intersymbol sample ~~as compared to~~ and an average of first and second symbol samples, the first and second symbol samples being taken from first and second consecutive symbols, respectively, and the intersymbol sample being approximately mid-way between the first and second symbol samples, averaging the amount of timing error over a period of time or over a number of symbols, determining whether the average error exceeds a threshold, and adjusting the timing of symbol sampling based on the amount of error, if the amount of error exceeds the threshold.

42. (Canceled).

43. (Original) The method of claim 41 wherein the value of the intersymbol sample is interpolated or estimated based on one or more other sample values.